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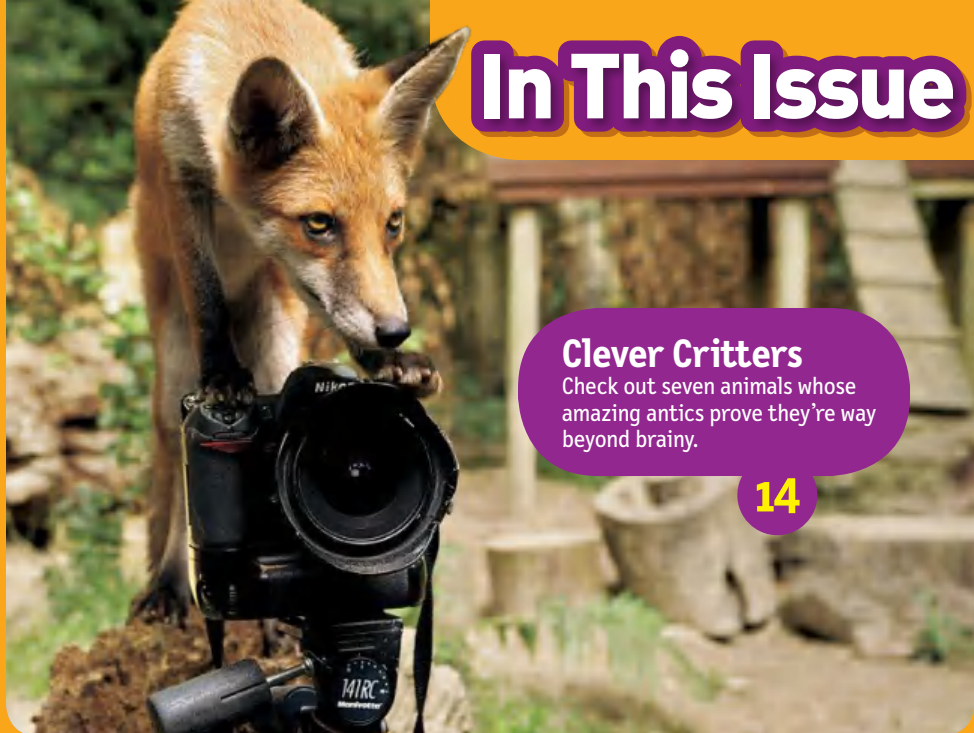
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# In This Issue



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Check out seven animals whose  
amazing antics prove they're way  
beyond brainy.

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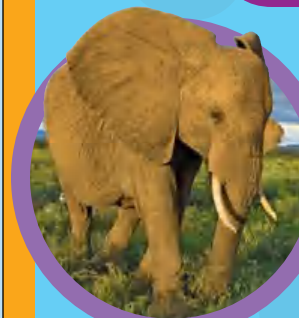
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BY JULIE BEER AND MICHELLE HARRIS

# Check out these outrageous facts.



The world's largest passenger jet weighs as much as 100 hippos.

A WHALE'S EARWAX CAN BE AS THICK AS A MATTRESS.

Some storm systems can hold more water than the Mississippi River.

A SALAMANDER NICKNAMED

THE "SNOT OTTER" OOZES

SLIME WHEN THREATENED.



ORANGUTANS SOMETIMES MAKE WHISTLES OUT OF LEAVES.

Amazon.com "CADABRA" was originally called

A restaurant in Singapore once sold a pizza baked within a pizza.

IT WOULD TAKE 225 MILLION YEARS TO WALK A LIGHT-YEAR (THE DISTANCE LIGHT TRAVELS IN A YEAR).

ONE HOTEL IN DUBAI, A CITY IN THE COUNTRY OF THE UNITED ARAB EMIRATES, LENDS 24-KARAT-GOLD iPADS TO ITS GUESTS.

CHECK OUT A BOOT-WEARING PIG AND OTHER ODDITIES IN THE BEST OF WEIRD BUT TRUE ON NEWSSTANDS NOW!





# CHEW ON THIS

BY KAY BOATNER

**MANGO LASSI** India's version of the smoothie can be mixed with fruit or spices, but it's almost always blended with yogurt. It's a favorite refreshment in the summertime when India's temperatures can hit triple digits. Sip up these facts about the mango lassi.

Some people chew **CARDAMOM** pods to fight bad breath.



A **MANGO** tree can grow up to a hundred feet tall.

In the 11th century, German peasants paid for goods with **HONEY**.



**LIME** juice has been used to clean the walls of the Taj Mahal, India's most famous landmark.



**YOGURT** was once thought to bring a long life and good looks to those who ate it.



**EARN A FOODIE BADGE** by tagging your food photos with **#ChewOnThis**. [ngkidsmyshot.com](http://ngkidsmyshot.com)

**CHECK OUT THIS BOOK!**



## COOL THINGS ABOUT INDIA

Many buildings in the village of Shani Shingnapur have no doors.

India has more post offices than any other country.

The game of chess was likely invented in India.

The country's national bird is the peacock.

Cows—considered sacred by many in India—are often seen roaming city streets.

# COOL inventions

BY CRISPIN BOYER

THE CRAFT RISES TO THE SURFACE AS SOON AS IT'S TURNED OFF OR LOSES POWER.

PILOT SITS HERE

PARKING

DRIVING

## UNDERWATER PLANE

The DeepFlight Super Falcon Mark II may look like an airplane. But it was built to brave the oceans. The diving machine's wings are similar to a jet's, only turned upside down. As the two-person craft dives underwater, the inverted wings generate negative lift—a force that helps push the craft downward, creating an extra smooth and speedy ride. Dome-shaped windows over each seat give the pilot and passenger panoramic views of undersea scenery. And the craft's superquiet motor won't scare away marine animals. The sleek submersible, which can glide up to 400 feet below the water's surface, can even do tricks such as barrel rolls. With this plane-like diver, fun under the sea will really take off.

## LAMP PUZZLE

What a bright idea! Inspired by the classic *Tetris* video game, the Tetris Stackable LED Desk Lamp is divided into seven differently shaped pieces that can fit together in several ways. Plug in the lamp's base and flip on its switch. Then pile the other pieces on top of it. The base feeds electricity to an LED bulb in any block directly touching it, causing it to illuminate. When more blocks are added, pieces below pass up electricity, and the new blocks light up too. You can create various formations with the blocks, and each piece glows a different color. It's no puzzle why this light is so cool.



BEFORE



AFTER

## FLOATING SPEAKER

Here's a sound system that rises above the competition—literally. The OM/ONE spherical speaker floats nearly an inch over its base, spinning slowly as it streams music from smartphones, tablets, and other devices. How does this gravity-defying gadget work? One magnet is built into the speaker and another three are built into the base. These magnets are positioned in such a way that when they're near each other, they create a repelling force. The force is so strong that it pushes the round speaker into the air. And because it doesn't rest on a sound-absorbing surface such as a table, the speaker uses less power to reach the same volume as other speakers. This is one sound product.



DEEPFLIGHT (UNDERWATER PLANE BIG IMAGE, PARKING); PHOTO COURTESY OF LAUCALA ISLAND RESORT (DRIVING); PALADONE PRODUCTS LTD. (LAMP PUZZLE, BOTH); © OMONE (FLOATING SPEAKER)



# By the Numbers

## ANIMAL INTELLIGENCE

Scientists can estimate an animal's brainpower by calculating a number based on the size of its brain and the size of its body. The higher the number, the "brainier" the critter. See how the creatures below score on the smart scale.

Size isn't everything when it comes to intelligence. Scientists are still figuring out the best way to measure animal smarts—so stay tuned!

BOTTLENOSE DOLPHIN  
**5.3**

MOUSE  
**0.5**

DOG  
**2**

HUMAN  
**7.4**

RABBIT  
**0.4**

CAT  
**1**

SHEEP  
**0.8**

ORCA  
**2.6**

As much as two-thirds of a shark's brain is devoted to its sense of smell.

Cockroaches have a backup brain in their rear ends.

Your brain is only 2 percent of your total body weight, but it uses up to 25 percent of your body's energy.

An alligator's brain can fit into half a tablespoon.

Animals can lose the ability to sneeze if a certain part of their brain is damaged.

ASTONISHING  
STORIES FROM  
THE FILES OF

# Guinness World Records

**MORE RECORDS!**

Go online for more information  
about Guinness World Records.  
[natgeo.com/kids/worldrecords](http://natgeo.com/kids/worldrecords)



**BIIG**

**BALLOON**

Manjit Singh is really pumped! He personally inflated a weather balloon eight feet in diameter in 42 minutes, the fastest ever. Weather balloons, which scientists use to measure cloud altitude and air currents, are usually filled by a machine with invisible gas so they float. But Singh used his lung power to breathe his own air into the balloon! He kept the air from rushing back into his lungs by breathing in through his nose and out his mouth. Wonder how he kept from getting dizzy.

## EARSHOT

No one can say this talent is a dime a dozen. Monte Pierce can fling a dime nearly 12 feet with his earlobe, the farthest ever. His lobes are so stretchy that he can touch them under his chin. Pierce says that years of tugging his earlobes caused the unusual length. So *don't* try this at home!

I'M ALL  
EARS.



## POTTY OF GOLD

You can look, but you can't flush. The world's most expensive bathroom was available only for public viewing, not for using. Costing about four million dollars to make, the bathroom—located in a Hong Kong jewelry store—had gold toilet bowls, sinks, toilet paper holders, and doors. Thousands of diamonds, rubies, and pearls studded the ceiling. This is one bathroom that sparkled even *before* it was cleaned!





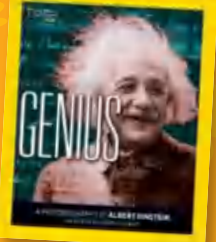
# History's Greatest Hits

BY ANDREA SILEN ART BY JOE ROCCO

## Albert Einstein

A brilliant physicist, Albert Einstein worked to crack open the mysteries of the universe. Find out more about the life of this legend.

CHECK  
OUT THE  
BOOK!



START

I'M AN ACE AT CARD  
CONSTRUCTION.



1879

Albert Einstein is born in Ulm, Germany. As a child, the prodigy enjoys solving math riddles and building skyscrapers out of playing cards. Some of his card creations are 14 mini-stories tall!

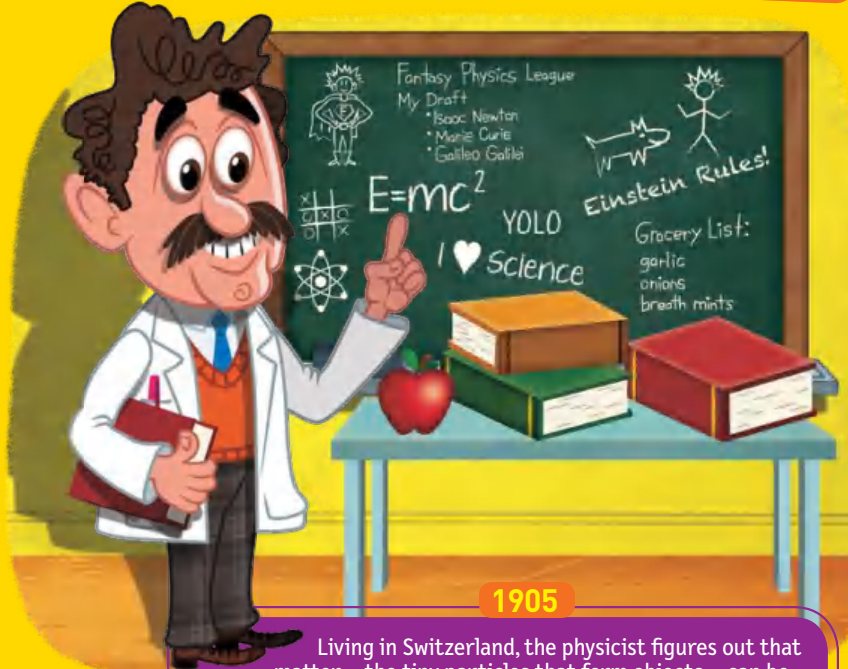
1895

Sixteen-year-old Einstein writes his first scholarly paper on the force of magnetism. Bet that *pulled in* a lot of readers. Ha-ha. Get it?

1915

THIS THEORY  
IS GOING TO  
BE AS BIG  
AS MY HAIR.

Einstein wows the world by publishing his theory of relativity. The theory explains gravity. Basically ginormous objects such as planets bend the space around them as they travel or pulsate. These curves in space then produce a gravitational pull toward the planet.



1905

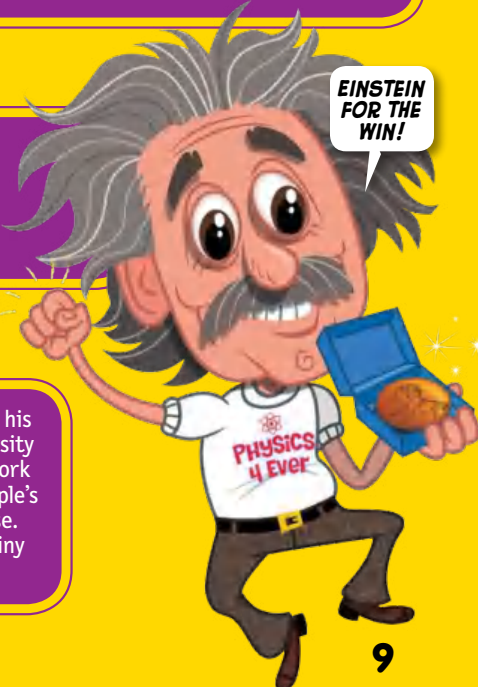
Living in Switzerland, the physicist figures out that matter—the tiny particles that form objects—can be turned into energy, and vice versa. He also comes up with the famous formula  $E=mc^2$ , which calculates the energy produced by converting a given amount of matter. He's now a star!

1922

Einstein receives the Nobel Prize in physics—an award for major scientific accomplishments.

1933

The science genius continues his research at Princeton University in New Jersey, and his life's work helps completely change people's understanding of the universe. The contributions of this brainy guy are mind-blowing.



EINSTEIN  
FOR THE  
WIN!

Bet you  
**didn't  
know**

BY ERIN WHITMER

# **7** wacky facts about science

**1** Some  
clouds  
are more than  
**10 miles**  
tall.

**2** Humans  
and slugs  
share more than  
half of their genes.

**3** Astronomers  
have discovered a  
star  
that is made of  
a 10-billion-trillion-trillion-  
carat diamond.

**4** A storm  
on Neptune was  
as wide as the entire  
Earth.

**5** There are  
volcanoes  
inside  
glaciers  
in Iceland.

**6** A  
battery  
can be made out  
of a  
potato.

**7** Chewing  
gum  
can make your  
heart beat  
faster.





# Stupid Criminals

BY ELISABETH DEFFNER

**BUSTED!**



## KNOCK, KNOCK!

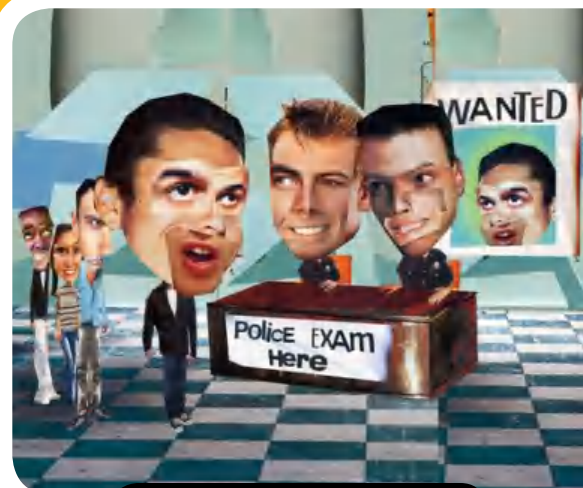
WOODBINE, GEORGIA

What did one crook do after escaping from jail? He came back! Three inmates had forced open the back door of the jail they were in to release a fourth prisoner. After escaping prison grounds, the bad guy broke into a convenience store and stole some goodies to bring back to his three “friends.” But when he returned, they’d locked him out. Instead of escaping for good, the inmate looked for another way back into jail, and a guard spotted him. “He was worried he’d be in trouble,” Captain Larry Hamilton says. “He was right!” Maybe jail food is better than people think.

## THOUSAND-DOLLAR MISTAKE

KALAMAZOO COUNTY, MICHIGAN

Three thieves thought they were pretty smart when they stole a safe that included a thousand-dollar bill. They took the large bill to a bank to break it, but they didn’t know that thousand-dollar bills hadn’t been printed since 1945. Figuring the antique money was stolen, the teller contacted police. “The rare bill was a huge red flag,” says Detective Sergeant Jim van Dyken. The thieves probably wished a thousand times over that they hadn’t been so dumb.



## FLUNKING THE TEST

CHULA VISTA, CALIFORNIA

This guy couldn’t decide if he wanted to be a crook or a police officer. A thief ran away after shoplifting, but police tracked him down with help from the bad guy’s former roommates. A detective called the thief, and while the detective was getting him to admit to his crime, the thief mentioned he was taking an exam to become a police officer. Later, when the crook showed up for the test, an officer told the guy to walk to a separate room. He thought it was part of the hiring process—but actually it was part of the arresting process.

# Amazing Animals

## DOGS PLAY TENNIS— SORT OF



NOW  
SHOWING  
**DOGGIE  
BALL BOYS**

[natgeo.com/kids/tennis-dogs](http://natgeo.com/kids/tennis-dogs)

### Auckland, New Zealand

Ball boys at this year's ASB Classic tennis tournament worked like dogs as they raced to fetch balls, carried tennis rackets, and delivered water bottles to tennis superstar Venus Williams. That's because they were, well, dogs.

A few cute pups won the job after organizers asked animal trainer Mark Vette to provide them with canines for a television commercial being shot at the event. Vette picked three dogs to work the filmed practice match: a border collie named Ted, a bull mastiff cross called Oscar, and a terrier mix dubbed Super Teddy.

After training for six weeks, the animals were ready for the gig. "They were taught to run into the game only when the ball hit the net on their side of the court," Vette says. "They slobbered a lot during the real thing but otherwise did a grand-slam job."

Vette's favorite moment? When Super Teddy lobbed a big kiss across Williams's face after the match. We hope the hard-working pups got to take home a souvenir tennis ball or two.

—Kitson Jazyka



SUPER TEDDY'S  
SUPER-PROUD OF  
HIS PERFORMANCE.

DON'T  
I LOOK  
FETCHING?



SUPER TEDDY RETURNS  
A BALL TO TENNIS PRO  
VENUS WILLIAMS.



I PROMISE  
THIS TRIP  
WON'T BE  
BOAR-ING!

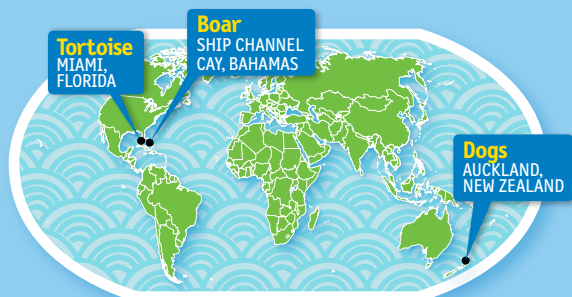
## BOAR WELCOMES TOURISTS

VISITORS TO THE  
BAHAMAS CAN SWIM  
WITH STONES THE  
WILD BOAR, AS  
WELL AS PIGS LIKE  
THIS ONE.

### Ship Channel Cay, Bahamas

Forget the tropical fish and turquoise waters. Visitors to this tiny island in the Atlantic Ocean are more excited to spot Stones, a wild boar who has become a tourist attraction. Most wild boars spend their days sleeping in tall grass, so they're hidden from humans. But Stones runs on the beach, splashes in the ocean, and hams it up for cameras. "When visitors take pictures of Stones, he'll sit very still and stare straight ahead," says islander Mona Wiethüchter, who says Stones has been hanging around ever since his mom brought him onto the beach to look for leftover human food. "When he's sleepy, he'll dig himself a hole in the sand, right between sunbathers." Several other wild boars live on the island, but Stones prefers to be around his people pals. "He isn't interested in having other animal friends," Wiethüchter says. "He likes to hang out wherever we are as the center of all the action."

—Sarah Wassner Flynn



I THINK  
I'LL  
STICK TO  
VEGGIES.



## TORTOISE SWALLOWS TURTLE

### Miami, Florida

When veterinarian Don Harris took an x-ray of Lola the pet tortoise, he couldn't believe what he saw in her stomach: a turtle! Or rather, a tiny metallic turtle charm.

"I thought my staff was messing around with me," says Harris, who examined Lola after her owner brought her in. Dirt and other material had lodged around the charm, blocking Lola's intestines and making her sluggish and unable to go to the bathroom.

Medicine failed to help the charm, um, come out of Lola, who probably swallowed the item while she was grazing outside. So Harris drove the tortoise two hours to fellow veterinarian Doug Mader. Mader has performed over 700 object-removal surgeries, taking rocks, screws, and other things out of animals. "This is the first time I've ever taken a turtle charm out of a tortoise, though," Mader says.

After a successful surgery, Lola is back to her normal self. And her owner plans to keep a closer eye on her pet when the reptile's outside eating. That's probably wise, since this tortoise doesn't seem to know she's a vegetarian.

—Jed Winer

AN X-RAY REVEALED  
THE METALLIC CHARM  
IN LOLA'S STOMACH.

# Clever Critters

**These animals show surprising smarts.**

BY ALINE ALEXANDER NEWMAN

**C**hickens are dumb. If there was an intelligence ladder, they'd be perched near the bottom. Foxes would sit on a rung higher than turtles. And chimps would outrank all animals except humans—who rule from the top.

At least that's how scientists used to think. But that thinking has changed. Why? Because no one can design an intelligence test that is fair for all creatures. Two-handed chimps can learn sign language. But robins can't—they only have wings. Goldfish would fail at tree-climbing but earn A's in swimming. "I really don't make cross-species comparisons," says Marc Bekoff, a scientist from the University of Colorado in Boulder. "Dogs do what they need to do to be dogs, and foxes do what they need to do to be foxes."

That said, animals can demonstrate some surprisingly smart behavior. Keep reading for mind-boggling tales of animal brainpower.





They're small and seem catlike, but red foxes are relatives of dogs, wolves, and coyotes.

## FOX PHOTOGRAPHER

Jessie the red fox pup is curious. At New Forest Wildlife Park in Ashurst, England, she approaches photographer Simon Czapp the minute he enters her pen. Surprised, the photographer lets her sniff his shoes and stick her nose in his camera lens.

When Jessie stops, Czapp sets up a camera mounted on a tripod next to a tree stump. Then clutching a second camera, he steps back to watch. The little fox doesn't disappoint. She climbs onto the stump and examines the camera. "She looks funny," says the photographer, who snaps picture after picture.

Later Czapp uploads photos from the shoot to his computer. Alongside his pictures are others he *didn't* take—they were taken by the fox! Jessie snapped herself reflected in a window, and she captured the photographer photographing her: "Technically my pictures were better," Czapp says. "But hers were nicely framed." Someone should give this furry shutterbug a selfie stick.



JESSIE—REFLECTED IN THE BACKGROUND MIRROR—TAKES A PICTURE OF CZAPP.

A CROCODILE PILES STICKS ON ITS SNUOT TO ATTRACT NEST-BUILDING BIRDS.

## CLEVER CROCS

Scientist Vladimir Dinets is watching crocodiles in India. Some of them swim up under floating sticks and laze around for hours, balancing the sticks on their snouts. "I think it's just for camouflage," he says. But years later at Florida's Saint Augustine Alligator Farm Zoological Park, he sees American crocodiles doing the same thing. Dinets notices a huge colony of nesting egrets nearby just as there was in India. Is there a connection between the crocs and these birds?

Intrigued, Dinets makes two discoveries. "The crocodiles tend to carry sticks near egret colonies, mostly at nest-building time," he says. Why? The crafty crocs are using sticks as bait to lure the unsuspecting birds closer. Then when an egret reaches for a stick to add to its nest, the hungry croc quickly opens its mouth. *Snap!* It's bye-bye, birdie! Dinets's research proves that reptiles use tools. It also makes crocodiles the only animals scientists know that hunt "in season."

Young crocodiles make high-pitched calls from inside their eggs when it's time to hatch.

## MONKEY MIND

Some common marmosets—a kind of monkey—learn faster than others. But they're all good at learning from each other. A wild marmoset called Alberto wants to open a box with bananas in it. He watches an instructional video that researcher Tina Gunhold-de Oliveira plays in Brazil's Atlantic Forest. Alberto puts his own twist on the instructions and creates a method that works. But it requires climbing on the box and pulling the lid open with his hand. Sometimes, while Alberto is on top of the box, another marmoset waits in front. Then that clever monkey steals the treat. "It's funny to watch," the researcher says.

Katharina, a pregnant marmoset, is too tired to open the food box at first. But she pays close attention to the video of a marmoset demonstrating how to do it—by grabbing the knob of the drawer from the front and pulling it open using both hands. After her twins are born, Katharina copies that technique and enjoys many goodies. "Social learning is crucial," Gunhold-de Oliveira says. And marmosets can learn from anyone—

family, pals, and even strangers on a screen.

The common marmoset enjoys snacking on tree sap.



A GROUP OF MARMOSETS WATCHES AN INSTRUCTIONAL VIDEO SET UP IN A BOX.





WHAT KIND OF  
**GENIUS**  
ARE YOU?

ADVENTURE  
**PASS**

[natgeo.com/kids/pass](http://natgeo.com/kids/pass)  
MEMBERS PLAY FREE!

Friesian  
horses can weigh  
more than 1,300  
pounds.

## HORSE FORCE

Mariska the Friesian horse wants two things: freedom and extra food. Getting either requires finding a path through a series of locked doors in her barn in Midland, Michigan. So the clever mare often trots around and checks for fasteners she can undo. The other horses gather to watch as she slides bolts, twists handles, pushes doors, and lifts latches. Then they join her in galloping on the lawn or scarfing down grain kept outside the stalls.

As soon as owners Sandy and Don Bonem change the locks, Mariska figures them out. "She thinks things through and actually has a plan," Sandy says. And if one plan fails, she devises another. Most recently the Bonems hung a new gate across the opening to Mariska's stall. Will that keep her confined? Time will tell. But for now the Bonems remain on guard, and for good reason. Mariska's sister is learning her tricks!

## SMART SUPERHEROES

Antelope hunters in Rwanda, a country in Africa, set snares by tying a noose to a branch, bending the branch down, and staking it to the ground. When an animal bumps a hidden stake, the branch springs upward, tightening the noose around its leg. But this time, an endangered three-year-old mountain gorilla has died after getting caught in the snare.

Days after the young ape's death, John Ndayambaje, a gorilla bodyguard with the Dian Fossey Gorilla Fund International, spots another snare in the forest. He quickly yanks up the rope.

Then, to his surprise, two gorilla youngsters suddenly leap forward. They finish dismantling that snare and, with another juvenile's help, destroy a second one that Ndayambaje hadn't even noticed. "They want to be sure there is no longer danger," he says.

"Gorillas are so like us," says Tara Stoinski, chief scientist of the Gorilla Fund. "They feel pain and help each other." For these smart apes, one tragedy is too many.



GORILLAS  
DESTROY  
TRAPS SET IN  
THE FOREST.



Labs have been  
ranked as the most  
popular dog breed in  
the United States by  
the American Kennel  
Club for 24 years  
in a row.



Only about 880 mountain gorillas are left on Earth.



## WHERE THEY LIVE



## BRAINY BFF

Nancy Cowen, 89, can't manage on her own. So relatives take her to Bramley House, a nursing home in Surrey, England. Soon after, staff notice a Persian-cross cat hanging around the place. The bedraggled creature spends three weeks peering in windows and sleeping on a patio table outside Cowen's room. "I think she's a stray," caregiver Laura Costello says.

One night another employee picks up the cuddly kitty just as Cowen appears in her open window. The cat scrambles free and bounds inside. "This looks like my cat, Cleo," Cowen says. "But my cat is missing her tail."

The employee turns the cat around—her tail is a stump! Cowen's relatives gave Cleo to the neighbors. But the devoted pet left them and traveled over a mile to Bramley House, a place she had never been. "It's extraordinary," Costello says. "We have no idea how Cleo found her owner." But everyone is glad that she did.

Cats lack the ability to taste sweetness.



## DOG LOGIC

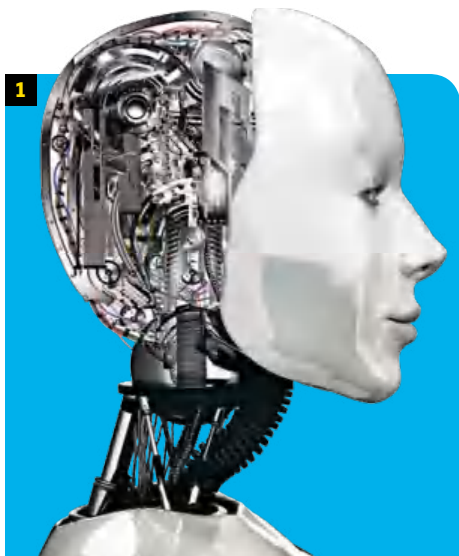
Ty the yellow Lab opens screen doors. He holds jars between his paws and twists their caps off with his teeth. And he raids the refrigerator so often that his family puts a lock on it.

On Labor Day, Ty goes with his owners to a neighborhood picnic on Round Island in New York's St. Lawrence River. The dog watches as people grill hamburgers and prepare sweet corn. Suddenly one woman throws up her hands. "Butter!" she yells. "I forgot butter for the corn."

That's too bad. But folks make do without. Meanwhile, Ty wanders off. When he finally returns 30 minutes later, his owner's mom, Marilyn Hutchinson, is shocked. "He must have understood what we were saying and gone searching from house to house," she says. Why does she think that? The proud pup is wagging his tail and holding a fully wrapped stick of butter in his mouth!







1

A scientist estimated that it would take **at least 10 megawatts of electricity** to **power** a **robot** with a **processor** as **smart** as the **human brain**.

2

A **MATH GENIUS** FROM **INDIA** TOOK JUST **28 SECONDS** TO **CORRECTLY** **MULTIPLY TWO** **13-DIGIT NUMBERS** IN HER HEAD.

3

A study found that **eating blueberries** may **sharpen** your **memory**.

4

THE **HUMAN BRAIN** CONTAINS **400 MILES** OF **BLOOD VESSELS**.

5

If you could spread a **human brain flat**, it would cover a **small kitchen table**.

6

Being in a **good mood** may make it easier to **solve puzzles**.

7

**Orangutans** at **zoos** have used **tablets** to **play games**, **draw**, and **watch videos** of other **apes**.



# Cool

## THINGS ABOUT



8

A cat's brain can store **a thousand times more** information than an **iPad 2**.



9

A man won over **\$4.4 million** on the quiz show **Jeopardy!**



11

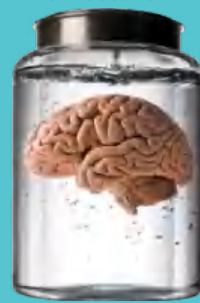
**Buff-tailed bumblebees** test out different routes to flowers to determine shorter paths.

10

Drinking **BEET JUICE** can **INCREASE BLOOD FLOW** to the **BRAIN**.

14

About **5,000 brains** are held at Harvard University's "**Brain Bank**," a center that stores **specimens** for research.



15

A **beluga whale's brain** is **more than twice as big as normal** for an **animal its size**.

12

**Expert chess players** memorize an estimated **100,000 opening moves**.



13

**Akhil Rekulapelli**, champion of the 2014 **National Geographic Bee**, studied **geography** **30 hours each week** in the **6 weeks** leading up to the competition.





16

Genius inventor Thomas Edison set up his first lab at about age ten.



17

People with a condition called **hyperthymesia** can remember nearly every single day of their adult lives.

18

REGULAR PIANO PRACTICE MIGHT UP YOUR IQ.

19

Captive octopuses have been known to twist off the lids of jars.



20

A 16-YEAR-OLD FROM NEW YORK CITY BECAME FAMOUS FOR SPEAKING 23 DIFFERENT LANGUAGES.

21

An ancient Greek scholar estimated **Earth's circumference**—the distance around the planet at its middle—by **measuring shadows cast by a stick**.



22

THE HUMAN BRAIN IS ROUGHLY 75 PERCENT WATER.



# SMART STUFF

BY ALICIA KLEPEIS

23

LAUGHING AT A JOKE REQUIRES ACTIVITY IN FIVE DIFFERENT AREAS OF THE BRAIN.

24

Countries with higher chocolate consumption produce more winners of the Nobel Prize, an award for important contributions to society.

25

Frequent dancing can boost brainpower.



26

EVERY TIME YOU LEARN SOMETHING NEW, YOUR BRAIN STRUCTURE CHANGES.

27

Brushing your teeth with your **nondominant hand** can create **new pathways** for brain cells.

28

GRAY SQUIRRELS can FIND ACORNS nearly TWO WEEKS after they've been BURIED.

29

It's believed that the average human has 50,000 to 70,000 thoughts a day.

30

THE HUMAN BRAIN HAS A SIMILAR TEXTURE TO TOFU.



# ROBOTS

BY JAMIE KIFFEL-ALCHEH

Robots may soon reboot the entire way you live. Over the past 50 years, these machines have mainly been used by NASA, or in places such as factories and research labs. But scientists are developing humanlike bots called androids that may one day “live” with families and help with everything from folding laundry to grocery shopping to even playing catch. “Future bots could serve as companions, assisting with daily activities,” says roboticist and National Geographic Emerging Explorer Chad Jenkins. Check out the science behind five awesome robots.

## BENEBOT WHAT IT'S WIRED FOR: Storing information

Built for stores such as supermarkets, Benebot operates by connecting through Wi-Fi to the cloud. The cloud uses the Internet to access networks of computer servers that can perform different tasks such as storing data and supporting video chats. And Benebot is able to share things with you that are kept on the cloud—for instance, information about products.

**HOW IT WILL CHANGE YOUR LIFE:** Not sure which video game to buy while shopping at the electronics store? Using data from the cloud, Benebot will give you the scoop about each of your options so you can make a decision. It'll also stream videos of cool new items. And you may never again have to scour your grocery store for your favorite snack. Just ask Benebot where to go and it'll use a laser pointer to show you the right way.







# CHIMP

## WHAT IT'S WIRED FOR:

### Moving around obstacles

**CHIMP** uses a system called LiDAR to find objects and navigate around obstacles. As the machine moves, it shoots pulses of light from its head. These beams bounce off objects back to CHIMP's built-in sensors. The robot measures how long the light takes to return to figure out the distance of objects. It then uses the information to build a 3-D map for CHIMP to follow.

**HOW IT WILL CHANGE YOUR LIFE:** The 5-foot-tall, 400-pound droid was designed to aid people affected by disasters such as tornadoes. CHIMP could use its navigation skills to deliver supplies to disaster victims. This droid can also operate tools such as drills. So if something was broken in your house, someday CHIMP might swing into handyman-mode and fix it. "CHIMP could also shovel snow and lug out the trash," says Nancy Ott, an engineer who helped build the bot. "Basically it could be your robot butler!"

# PR2

## WHAT IT'S WIRED FOR:

### Pattern recognition

If PR2 comes across a crumpled piece of clothing, it uses pattern recognition to search for similar shapes programmed into its database. If it finds a match, it receives steps on how to fold it.

**HOW IT WILL CHANGE YOUR LIFE:** In addition to folding your laundry, PR2 can use its pattern recognition technology for other tasks such as tying shoelaces or locating pancake mix in a cupboard. As with folding laundry, the bot scans its database to match what it "sees" with a set of instructions. With its agile hands, PR2 can even pour pancake batter into a frying pan and flip the flapjacks.



PR2 SHOWS OFF ITS SKILLS: GRAB-BING A BEVERAGE (1), LOADING DISHES (2), FLIPPING PANCAKES (3), AND SERVING A SNACK (4).



# JIBO WHAT IT'S WIRED FOR: Facial recognition

JIBO, an 11-inch-tall robot, has facial recognition technology, which takes and stores measurements of each feature on a human face. When someone walks into the bot's view, built-in cameras scan the face. JIBO then searches for the matching measurements in its database. In this way the bot is able to identify each individual in your family.

**HOW IT WILL CHANGE YOUR LIFE:** So busy you might forget your BFF's birthday? Not with JIBO around. Sync up your digital calendar with the bot. When JIBO "sees" and recognizes you, it'll give you reminders about events. You can also leave a message for JIBO to give to another family member. And forget fumbling for your camera during photo-worthy moments. If JIBO detects a group of smiling faces in front of it, the bot will automatically snap a pic. Say cheese!



# ROLLIN' JUSTIN

WHAT IT'S WIRED FOR: Tracking movement

The 330-pound machine has special cameras and movement-tracking software. These components work together to predict the flight path of an object such as a baseball after it's thrown into the air. As the ball nears, the bot calculates where to move its arm and when to close its hand. Then sensors in its fingers tell the bot if the ball has made contact.

**HOW IT WILL CHANGE YOUR LIFE:** Rollin' Justin's high-tech skills allow it to do more than play catch. With its ability to track movement, this droid could be used as a cutting-edge crossing guard, halting oncoming traffic so you can safely traverse the street. And with its high-precision hands, the bot can be programmed to help in your kitchen, such as by preparing and pouring beverages like hot chocolate. Now that's some sweet technology.



ROBOTICISTS SET UP ROLLIN' JUSTIN AT A TECHNOLOGY FAIR.

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Get a preview of the  
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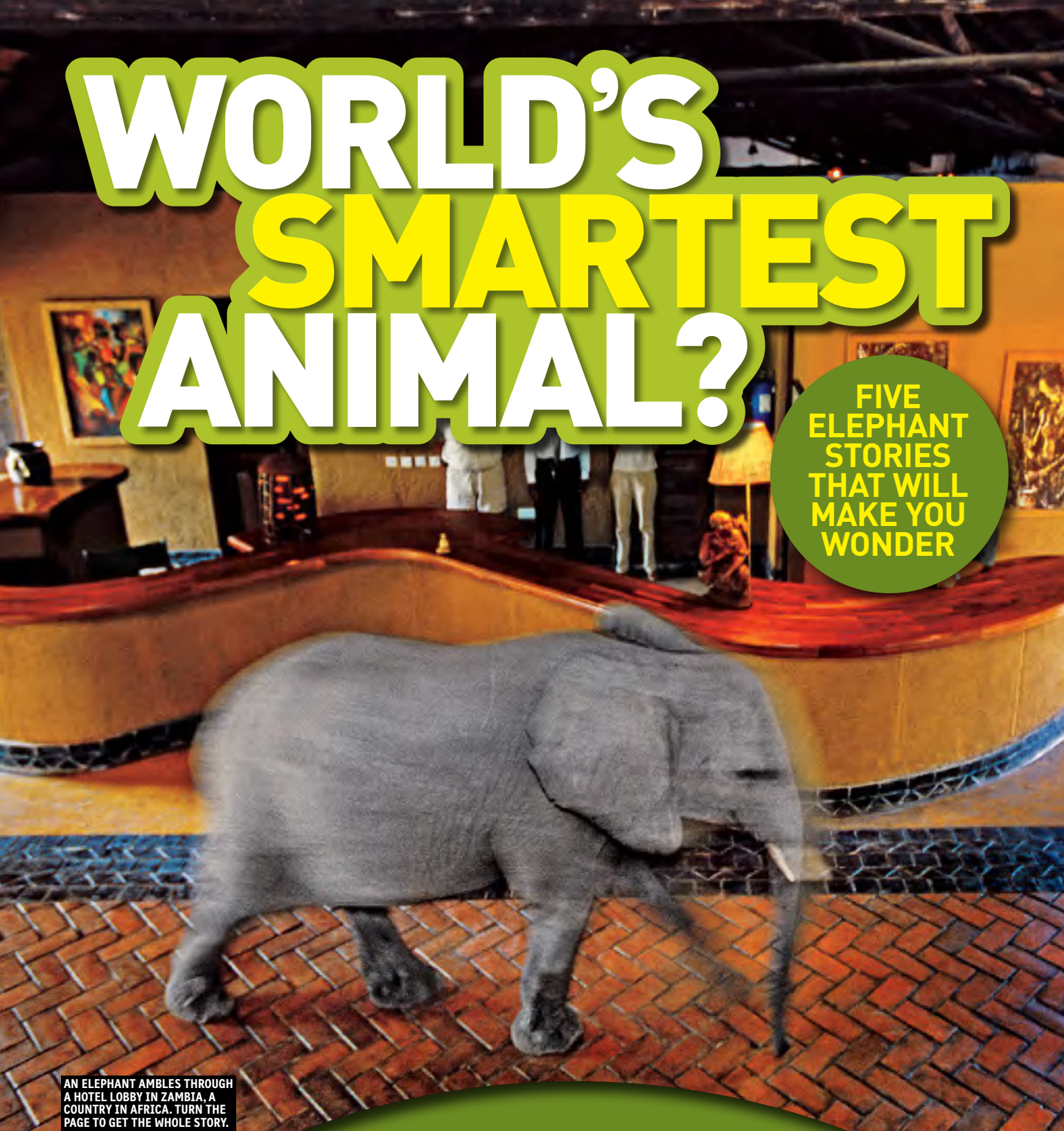
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Build and test out  
virtual bots.  
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# WORLD'S SMARTEST ANIMAL?

FIVE  
ELEPHANT  
STORIES  
THAT WILL  
MAKE YOU  
WONDER



AN ELEPHANT AMBLES THROUGH  
A HOTEL LOBBY IN ZAMBIA, A  
COUNTRY IN AFRICA. TURN THE  
PAGE TO GET THE WHOLE STORY.

## Elephants fascinate scientists.

Sure, dolphins, gorillas, dogs, and parrots are smart, but **could elephants be the smartest animal of all?** Here are **five true elephant stories** to help **you decide**.



# 1. Elephants have long memories.

Elephants never forget. “They keep coming to places they like, no matter what,” says photographer Frans Lanting, who snapped a picture of an unusual “guest” at the Mfuwe Lodge in Zambia, a country in Africa. The shot (shown on the previous page) features a wild elephant heading through the lobby toward a mango tree in the lodge’s inner courtyard.

The elephant’s herd has been visiting that tree every November for at least 34 years. That was long before Andy Hogg and his partner built the lodge 16 years ago. When the herd first found a building blocking their path, the group’s female leader, Wonky Tusk, didn’t hesitate. She led her family up the steps and into the reception area. For six weeks the elephants returned every day to eat the tree’s fruit. And they’ve been back again every year since.

—Aline Alexander Newman

TWO ASIAN ELEPHANTS HAVE SOME FUN.



According to one study, elephants recognize when humans are speaking different languages.

# 2. Elephants have a sense of humor.

A resident of the Smithsonian National Zoological Park in Washington, D.C., Ambika the 67-year-old Asian elephant used to be fed next to a younger elephant named Shanthi. Both received a daily ration of apples and carrots. “One day Ambika pushed her apples over to Shanthi,” says Marie Galloway, the zoo’s elephant manager. A friendly gesture, right? Shanthi thought so. She took the apples and gave Ambika her carrots. Little did Shanthi know that Ambika’s motives were not so nice.

By trading a few times, Ambika lulled Shanthi into trusting her. One day Shanthi reached for the apples and...ha! Ambika kicked her! Shanthi wasn’t hurt. But the joke was on her. “Ambika set her up,” Galloway says. “If an elephant can have a sense of humor, Ambika sure has one.”

—Aline Alexander Newman



AN AFRICAN ELEPHANT WANDERS ITS HOME IN THE GRASSLANDS.

An elephant can reportedly smell water from miles away.

# 3. Elephants make tools.

Elephants’ furless skin is super-sensitive. Tormented by biting flies, several captive Asian elephants in Nepal build their own flyswatters. An elephant uses its trunk to hold a leafy branch and swish it around its body, shooing away flies. Animal behaviorists Benjamin and Lynette Hart even observed individual elephants shortening a swatter and stripping off extra leaves to personalize their tool.

—Aline Alexander Newman



An elephant can live for more than 60 years.

AN ASIAN ELEPHANT USES ITS “HOMEMADE” FLYSWATTER.



## WHERE ELEPHANTS LIVE



AN ADULT AFRICAN ELEPHANT WRAPS ITS TRUNK PROTECTIVELY AROUND A BABY.

Scientists say that the African elephant's brain has three times more neurons (a type of cell that sends signals) than the human brain.

## 5. Elephants rescue each other.

A baby elephant fell into a dried-up mud hole in Amboseli National Park in Kenya, a country in Africa. The calf wasn't hurt, but it was too small to climb out. The animal's mom ran into the hole after her baby and bellowed.

Two adult relatives heard the cries and rushed over. First they studied the situation. It wasn't a terribly deep hole, but the sides were so steep that the mom couldn't get her baby out by herself. The relatives climbed into the pit to help. As the elephants dug out one side of the hole with their tusks and feet, a ramp was formed by the loosened dirt. Once finished, the mom pushed her calf up the incline.

"Elephants are cooperative," says Cynthia Moss, the biologist who witnessed the incident. They also seem to plan ahead, imagining how a ramp would work to save the baby elephant.

—Aline Alexander Newman

## 4. Elephants teach each other.

Not all of the humans that elephants encounter are friendly. The East African Maasai people have a tradition of proving their bravery by spearing animals they consider dangerous, including elephants. Luckily elephants can tell different human groups apart. In an experiment that proved this ability, elephants were presented with the clothing worn by two groups: the Maasai hunters and harmless local farmers. The elephants ran and hid when they saw or smelled the clothing worn by the Maasai but reacted much more calmly to the farmers' clothes. Even elephants that had never been attacked responded in the same way. How did they know to run? This knowledge had been passed down to them by others.

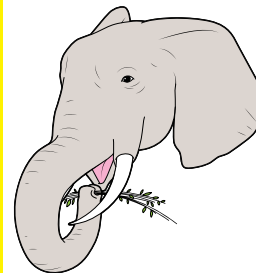
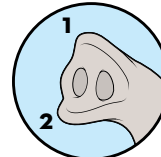
—Scott Elder

The largest elephant on record weighed about 24,000 pounds.

## TRUNK TALES

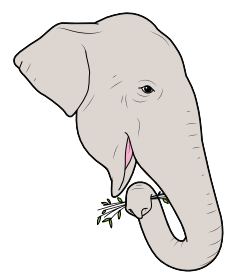
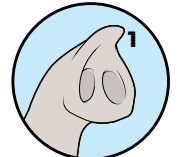
### AFRICAN

AFRICAN ELEPHANTS HAVE TWO FINGER-LIKE EXTENSIONS ON THE TIPS OF THEIR TRUNKS, WHICH THEY CAN USE TO GRASP OBJECTS.



### ASIAN

ASIAN ELEPHANTS ONLY HAVE ONE "FINGER" TO HOLD THINGS, THEY WRAP THE UNDERSIDE OF THEIR TRUNKS AROUND THEM.



# BRAIN GAL

BY JENNIFER SWANSON

**T**he human brain is thought to be the most complicated object in the known universe. As mission control for the rest of your body, it's always buzzing with activity. And this organ works in some weird ways. Exercise your noggin with some brain-bending challenges, then read on to find out what these activities reveal about your magnificent mind.



## CHALLENGE:

Sing the ABC song. Easy, right?  
Now belt it backward. Tricky, huh?

**WHAT'S HAPPENING:** When you learn something new, cells in your brain called **neurons** fire off electrical signals. Other neurons pick up the signals and pass them along like a game of hot potato. The neurons fire to each other in a unique pattern and form a memory. This memory is stored in an area of your brain called the **hippocampus**. If you do the activity again, the neurons repeat the pattern, strengthening the memory. So when you sing the ABC song, your brain cells are firing in an order that they've repeated many times. But by trying to perform the tune backward, you force the neurons to fire in reverse, which confuses them. This leads to your singing struggles.



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ADVENTURE  
PASS

MEMBERS  
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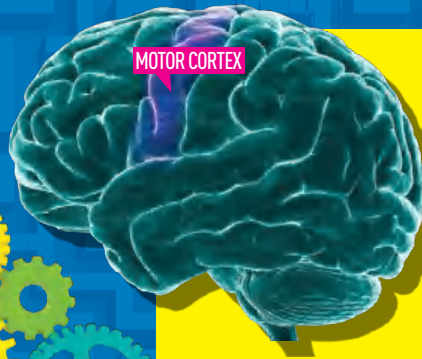
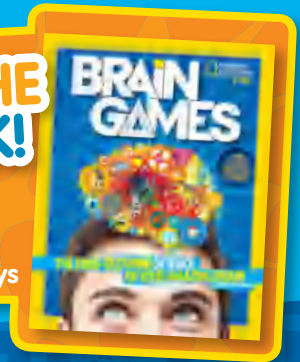
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# AMES

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## CHALLENGE:

Move your right foot in a circle clockwise while drawing a six in the air with your right index finger. Did your foot change direction?



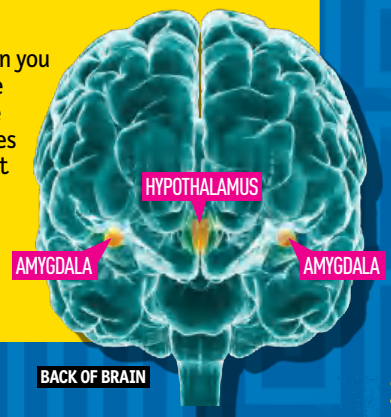
**WHAT'S HAPPENING:** Your brain is divided into two halves. The left half of your brain controls the right side of your body and vice versa. And each side has a section called the **motor cortex**, which controls movement. To perform the challenge, the brain's left half must do all the heavy lifting: raising your foot and your finger and maneuvering them in two different directions. Trying to juggle all of these commands overloads your thinker and causes it to abandon its mission. Instead the left half of your brain takes a shortcut, combining the motion of these body parts. That's why your foot starts copying the movement of your finger.



## CHALLENGE:

Close your eyes and envision a huge, hairy spider crawling up your arm. Did the thought cause you to cringe?

**WHAT'S HAPPENING:** Your brain is designed to help protect you from danger. When you imagine a spider skittering across your body, the brain perceives a threat. A set of structures in the brain called the **amygdalae** takes charge and activates your body's panic system. It shoots off a lightning-fast signal to another section called the **hypothalamus**, which tells your heart to beat faster, your breathing to speed up, and your stomach to clench. In doing this, your mind is sending a gotta-get-outta-here message to the rest of your body.



BACK OF BRAIN



# Fun Stuff

games, laughs, and lots to do!

**Happy  
Birthday,  
National  
Geographic  
Kids!**

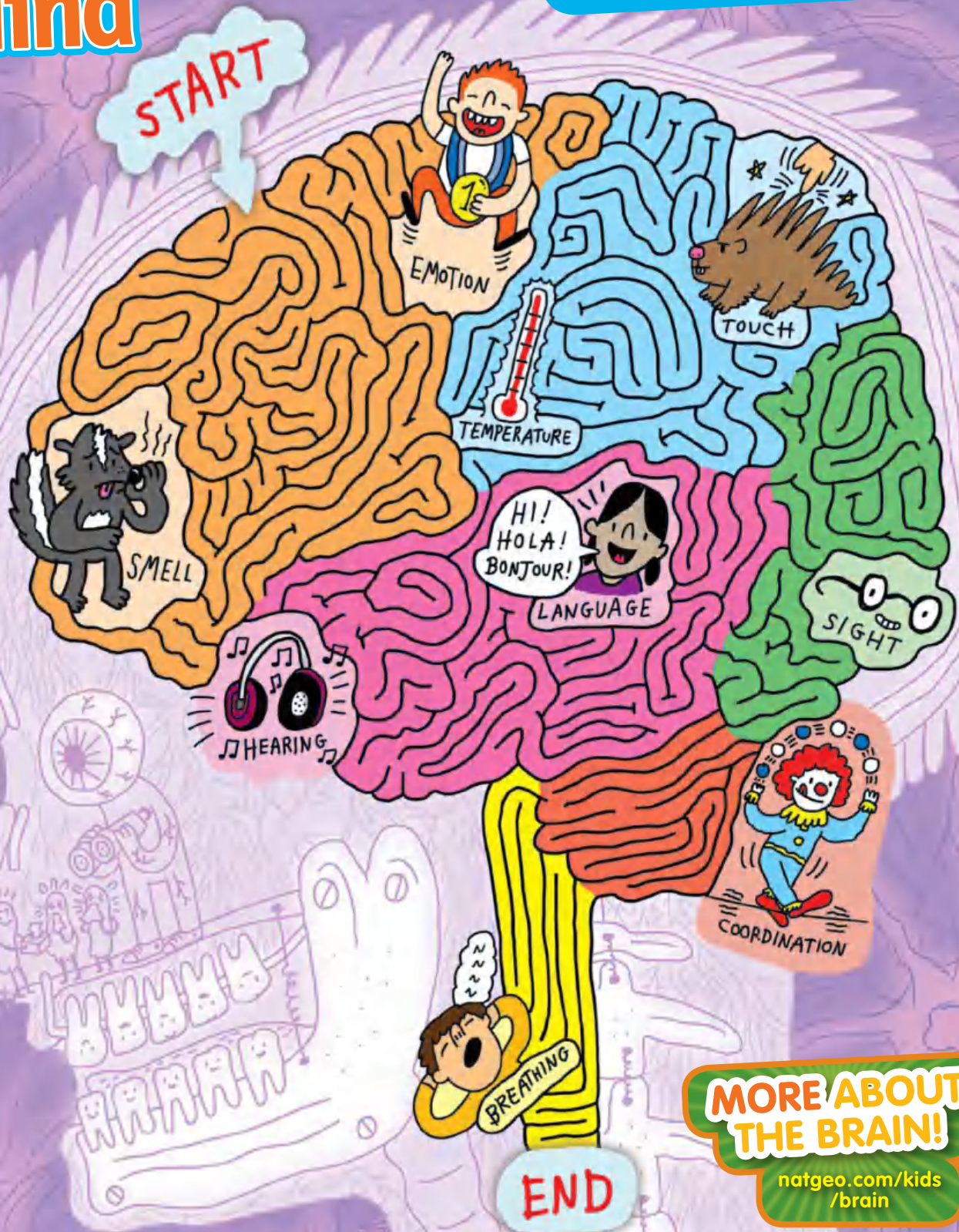
It's Nat Geo Kids' 40th birthday! To celebrate, we made you a present: a super-awesome Fun Stuff section jam-packed with extra games, puzzles, and laughs. What are you waiting for? Time to party!





# A-MAZE-ing Mind

Feeling brainy? Find the path through this maze that leads you from the top of the brain to the bottom without running into any obstacles. (The illustrations show which functions each part of your brain is responsible for.) Ready, set, think! **ANSWER ON PAGE 39**



**MORE ABOUT  
THE BRAIN!**

[natgeo.com/kids/brain](http://natgeo.com/kids/brain)



# SIGNS OF THE TIMES

Seeing isn't always believing. Two of these funny signs and signals are not real. Can you figure out which two are fake?

ANSWERS ON PAGE 39

1



2

NO NAME ST

3



4



5



6



7





From the pages of **QUIZ WHIZ:**

# STUMP YOUR PARENTS



If your parents can't answer these questions, maybe they should go to school instead of you!

ANSWERS ON PAGE 39

**1** Which artist has judged every season of *The Voice* in the United States?

- A. Adam Levine
- B. Pharrell Williams
- C. Christina Aguilera
- D. Shakira

**2** Which of the following U.S. presidents are carved into Mount Rushmore? (Choose all that apply.)

- A. George Washington
- B. Barack Obama
- C. Abraham Lincoln
- D. John F. Kennedy

**3** Which country lies on the Equator?

- A. Brazil
- B. Canada
- C. South Africa
- D. Mordor

Which of these hybrid animals is *not* real?

- A. zorse (half zebra, half horse)
- B. squink (half squirrel, half skunk)
- C. liger (half lion, half tiger)
- D. Saint Berdoodle (half Saint Bernard, half poodle)

**5** Which mountain has the highest elevation in the world?

- A. Mount Kilimanjaro
- B. Mount St. Helens
- C. Mount Everest
- D. Who knows? There's no tape measure long enough to reach the peaks.

**6** Which animal is *not* endangered?

- A. giant panda
- B. blue whale
- C. Amur tiger
- D. bald eagle

**7** Which of these are common dishes in places around the globe? (Choose all that apply.)

- A. frog juice
- B. grasshopper tacos
- C. yak
- D. fried scorpion

**8** Which school of study do movie monster friends Mike and Sulley attend in *Monsters University*?

- A. School of Bad Business
- B. School of Liberal Arts and Monstrosities
- C. School of Scaring
- D. School of Engineering

**9** What is the longest amount of time someone has lived in space?

- A. about 3 months
- B. about 14 months
- C. about 10 years
- D. Scientists can't be sure. Time doesn't exist in space.



## BIG WINNER!

Congratulations to the 2015 National Geographic Bee champion, Karan Menon, 14, from Edison, New Jersey. He won a \$50,000 college scholarship, a trip to the Galápagos Islands, and a lifetime membership to the National Geographic Society. Go online to learn more about the Nat Geo Bee.

[natgeo.com/kids/geobee](http://natgeo.com/kids/geobee)

Ask your principal to register your school for the 2016 Bee by January 18, 2016.



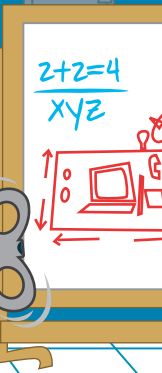
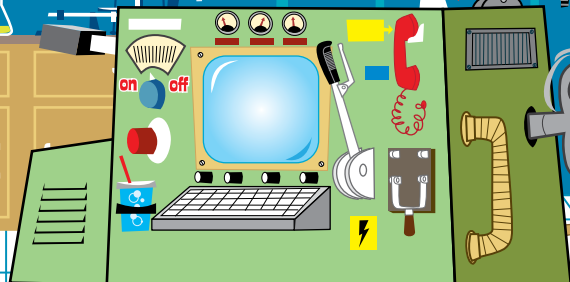
**CHECK  
OUT THIS  
BOOK!**

# Funny FILL-IN

## The Mad Inventor

BY JILL YAWORSKI

Ask a friend to give you words to fill in the blanks in this story without showing it to him or her. Then read out loud for a laugh.



I was going to be rich! I had just invented the first electric \_\_\_\_\_ . Using a(n) \_\_\_\_\_  
 \_\_\_\_\_ **tool** from \_\_\_\_\_ **relative's name** 's toolbox, I built it out of old \_\_\_\_\_ **noun, plural**,  
 metal \_\_\_\_\_ **noun, plural**, and rubber \_\_\_\_\_ **noun, plural**. The first time I turned it on, the machine  
 worked \_\_\_\_\_ **adverb ending in -ly**. I couldn't believe it! "\_\_\_\_\_ **exclamation**!" I yelled, \_\_\_\_\_ **verb ending in -ing**  
 up and down. I quickly invited a(n) \_\_\_\_\_ **adjective** billionaire to check out my invention. I couldn't  
 wait to sell it for \_\_\_\_\_ **large number** million dollars and live like \_\_\_\_\_ **name of a celebrity**. But when I  
 turned it on, something went terribly \_\_\_\_\_ **adjective**. The machine started \_\_\_\_\_ **verb ending in -ing**  
 and \_\_\_\_\_ **verb ending in -ing**. Suddenly it spewed \_\_\_\_\_ **something slimy** and shot slices of \_\_\_\_\_ **food**  
 in all directions. The billionaire started screaming at the top of his \_\_\_\_\_ **body part, plural** and  
 \_\_\_\_\_ **past-tense verb** out of my lab. Good thing I still get my weekly allowance.

**PLAY  
FUNNY  
FILL-IN**

and more games!

[natgeo.com/kids/pass](http://natgeo.com/kids/pass)

**ADVENTURE  
PASS  
MEMBERS  
PLAY FREE!**





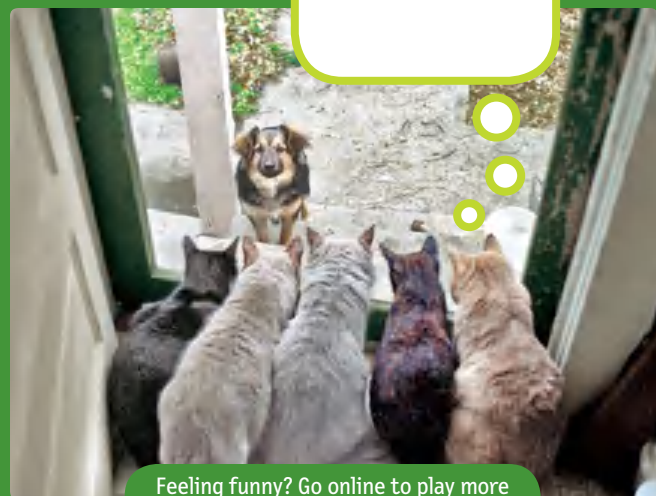
# Back Talk

I am  
one soggy  
doggie!

What do  
**YOU** think  
this dog is  
thinking?



1. **Fill in** the thought balloon.
2. **Cut out** the entire picture (or make a photocopy of it).
3. **Mail** it along with your name, address, phone number, and date of birth to Nat Geo Kids, Back Talk, P.O. Box 96000, Washington, DC 20090-6000. Selection for publication in a future issue will be at the discretion of *Nat Geo Kids*.



Feeling funny? Go online to play more  
"Back Talk." [ngkidsmyshot.com](http://ngkidsmyshot.com)

## From the September 2014 Issue

### Can we keep him?

Skylar S., 13  
Denver, Colorado

### I always knew you were more of an outside dog.

Eliza B., 12  
Greensboro, North Carolina

### We have a very ruff screening policy.

Vivian B., 11  
Butte, Montana

### It's a good thing there's no doggie door!

Charlie C., 14  
Eagan, Minnesota

### Not so funny *meow*, is it?

Aidan W., 12  
Springfield, Vermont

### You're barking up the wrong steps, doggie.

Esther C., 14  
Paso Robles, California

### We'll guard this door with all 45 of our lives.

Adriana V., 9  
Vellejo, California

### What's wrong, cat got your tongue?

Ben H., 10  
Canal Winchester, Ohio



# SAVE OUR SHIP!

Strange things are happening on this cruise ship, and the guests are sending out an SOS! Help them figure out the three-word phrase that describes each of the numbered scenes. The first and last words always begin with **s**, and the middle word always begins with **o**. For example, the answer to number one is, "Sailor operates saw." Ready to abandon ship?

ANSWERS ON PAGE 39





# What in the World?

CHECK OUT THIS BOOK!



## MIND OVER MUMMY

These photos show close-up views of things in Egypt. Unscramble the letters to identify what's in each picture. Bonus: Use the highlighted letters to solve the puzzle below.

ANSWERS ON PAGE 39



EALCM



IENL VIERR



PAMYSMRI



ICSSPE



NHXSIP



ASRBICA IATRFCTA



NKGIUTT'S KAMS



NCELKEAC



EOHIRLYPGSH

**HINT:** What do mummies listen to when they're working?

**ANSWER:** W



# Just Joking

Q

Why did the boy's mother knit him three socks?

A Because he grew another foot.

A



Q

What do you call terrified tyrannosaurs?

A

Nervous rex.

TONGUE  
TWISTER!



Say this fast three times:

Roscoe rescued Rosie from roaring rapids.

Q

Why do pilgrims' pants keep falling down?

A

Because their belt buckles are on their hats.



You've got to be joking...

Q

Where does a polar bear keep money?

A

In a snowbank.



GET MORE JOKES!

ADVENTURE PASS

MEMBERS PLAY FREE!

[natgeo.com/kids/pass](http://natgeo.com/kids/pass)

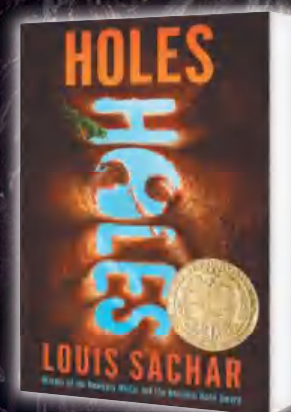
Mouse opossum



**ONE WRONG  
STEP  
CAN CHANGE  
EVERYTHING.**



Uncover the mystery in the woods in the new novel by Louis Sachar, bestselling author of *Holes*.



[FuzzyMudBook.com](http://FuzzyMudBook.com)

# Naughty PETS



BY KELLEY MILLER



**I SENSE  
A GIANT  
HAIR BALL  
COMING.**

**NAME** Lucia

**FAVORITE ACTIVITY**  
Grooming humans

**FAVORITE TOY**  
Scrunchies

**PET PEEVE** Hair spray

**NAME** Sport

**FAVORITE ACTIVITIES**  
Setting smelly world  
records

**FAVORITE TOYS**  
Cheese and feet

**PET PEEVE**  
Air fresheners

**ONE MORE  
COMPLETES  
THE LARGEST  
PILE OF STINKY  
SHOES!**





# My Shot



PHARRELL'S PICK!

**Pharrell Williams**, who wrote and produced the song "Happy," teamed up with Nat Geo Kids to pick his favorite My Shot image. "I chose this photo because while every moment in life is not always happy, if you look closely you'll always see the sun shining through," he says. For more ideas to put a smile on your face, check out the National Geographic Kids book *100 Things to Make You Happy*.



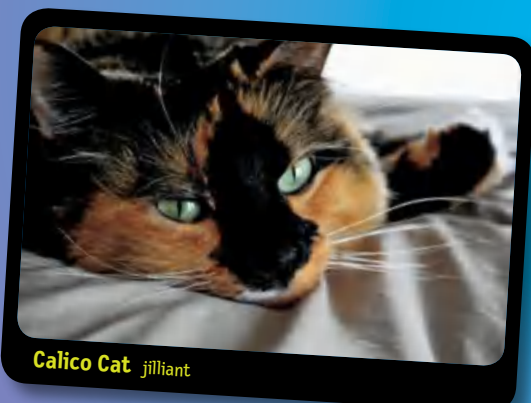
SimpleScenery



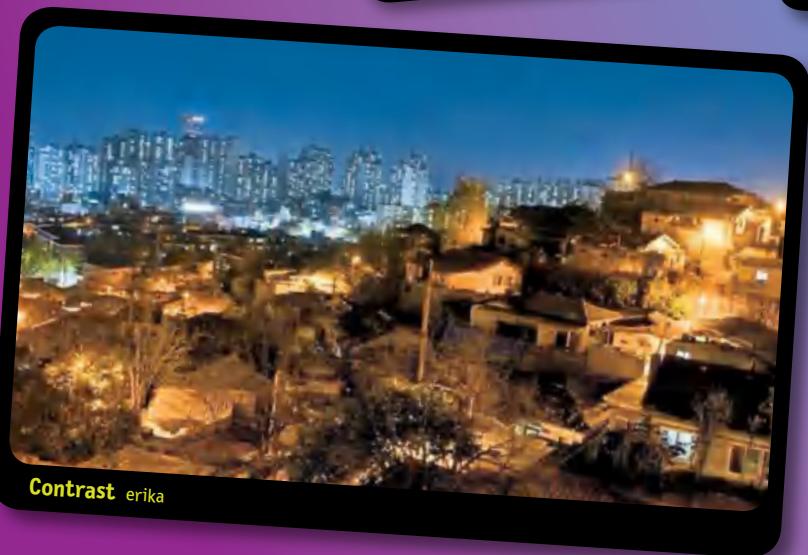
CHECK OUT THIS BOOK!



Pasta canonrebel



Calico Cat jilliant



Contrast erika



Seagull emalee





Climbing lilyflower



I'm Watching You tomboy photo



Sunset at the Lake tjrs



Painted On john's pics

## ★ FAMOUS PHOTO! ★



Jellyfish dove12001

**"Save Our Ship!"** (page 34):  
1. sailor operates saw, 2. shopkeeper organizes sunscreen, 3. seagulls overload sailboat, 4. swimmer offers sandwich, 5. sheepdog obeys surfer, 6. soldier opens safe, 7. snorkeler orders sundae.  
**"What in the World?"** (page 35):  
**Top row:** camel, Nile River, pyramids.  
**Middle row:** spices, Sphinx, scarab.  
**Bottom row:** King Tut's mask, artifact, hieroglyphs.  
**Bonus:** wrap music



"A-MAZE-ing Mind" (page 29)

This My Shot pic was recently featured at the **official residence** of Vice President Joe Biden and his wife, Dr. Jill Biden. Go online to submit your own photo that could be displayed at the vice president's home in **Washington, D.C.**, as well as earn an exclusive badge! [ngkidsmyshot.com](http://ngkidsmyshot.com)

★ VP ★



# THE ADVENTURES OF GOLDFISH® GRAHAMS

ONE DAY, DR. PROFESSOR WAS TESTING HIS TRANSPORT MACHINE...



WHAT THE DOCTOR DIDN'T REALIZE IS THAT HIS TEST SUBJECT HAD A **VANILLA CUPCAKE** IN THE POD, TOO!!



THE **GOLDFISH GRAHAM'S & CUPCAKE'S** MOLECULES MIXED TOGETHER!!



**SUPER CHARGED** WITH **VANILLA CUPCAKE FLAVOR!!!**

